

Surface Geology

Grace City Quadrangle, North Dakota

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EXPLANATION

QUATERNARY SYSTEM

RECENT

OAHE FORMATION

Qor Alluvium

River and stream sediment. Dark obscurely bedded clay and silt (mainly overbank sediment); generally overlying cross-bedded sand (channel sediment); on plains of modern streams.

Qos Pond and Slough Sediment

Dark, obscurely bedded clay and silt; in modern ephemeral ponds.

PLEISTOCENE

COLEHARBOR GROUP

Silt Facies

Lake sediment. Laminated silty clay, clayey silt, and fine sand of glacier-dammed lakes; yellowish-brown to dark gray in exposures depending on weathering intensity.

Qcof Proglacial lake sediment

Flat bedded sediment of low-lying plains.

Sand and Gravel Facies

River sediment. Moderately well-sorted, cross bedded sand and plane-bedded gravel, including sediment of meltwater rivers.

Qcrf Uncollapsed Flat Fluvial Plains

Flat-bedded sediment of nearly level plains and river terraces, commonly with braided channel scars, oxbows, and other relict markings; relief of 1 to 10 feet. Mainly on the extensive outwash plain in the northern part of the quadrangle.

Qcrt River terrace sediment

Mainly gravel and sand along the edges of the James River Valley.

Till Facies

Glacial sediment. Unsorted, unbedded mixture of angular, subangular, and rounded blocks of rock, gravel, and sand, generally in a stiff matrix of silt and clay; yellowish-brown to olive-gray in exposures depending on weathering intensity; contains discontinuous lenses of gravel and sand.

Qqcr Collapsed Glacial Sediment-Rolling

Rolling surface with kettles, partially to nonintegrated drainage, and numerous ice-disintegration features; slopes mainly to the southwest (toward the Missouri Coteau Escarpment).

Qccu Collapsed Glacial Sediment-Undulating

Gently undulating to undulating surface with poorly integrated drainage; local relief generally less than 10 feet.

Qqer River-Eroded Glacial Sediment

Glacial sediment with flat to undulating topography resulting from stream erosion in the bottom of large meltwater trenches or over board areas of till that have been washed by running water, overlain by a thin layer of fluvial sediment of the Coleharbor group or Oahe Formation in places.

Qct Ice-Thrust Masses

Glacial sediment that has been draped over glacial or preglacial sediment or rock that has been sheared up into thrust slabs or folds near the ice margin; hilly areas with intense internal linearity; local concentrations of gravel and boulders; local relief may exceed 150 feet.

Qclr Longitudinal Ridges

Drumlines - some of the narrower of these are shown by lines; trend is from NW to SE.

Geologic Symbols

— Known contact between two geologic units

— Transverse Ridge

Other Features

Water

Water - Intermittent

Rusten slough

Paved Road

Unpaved Road

